

ABSTRACT

There is provided an electrolytic integrated polishing apparatus which enables high precision polishing of the internal surface of a long sized cylindrical workpiece such as a metallic tube. The apparatus includes a work supporting unit 13 for disposing the cylindrical workpiece W, so that the axial center of the cylindrical portion is aligned with the vertical direction, a rotation axis 4 supported downward along the vertical direction and free-rotatably supported in an external tube 3 which is freely movable along the vertical direction, a tool electrode 5 including a grindstone directed to radial directions, attached to the tip of the rotation axis 4, and a plastic tube 6 wound around the external surface of the external tube 3 for pressurization. While the polishing process is performed, the plastic tube 6, inside of which is pressurized, expands in the gap between the external tube 3 and the internal surface of the cylindrical portion of the shape W, or the gap between the external tube 3 and the internal surface of the free ring, preventing deflections of the external tube 3 caused by rapid rotation of the rotation axis 4 and the tool electrode 5, which eventually prevents deflection of the tool electrode 5 in the cylindrical portion.